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Sweetness Is a Matter of Taste

By Phillip E. Jones

Since there is no chemical test for sweetness, makers of the good things in life must rely on consumer taste for a measure of the power of sweetness. While chemists and food technologists debate relative sweetness, manufacturers produce sweets pretty much according to their own past marketing experience.

The bestinformed current opinion is that the degree of concentration chosen for a comparison of sweeteners affects materially the degree of sweetness. Sweetness also is influenced by such factors as the temperature of the product in which sweeteners are being compared, the supplementary effects of two or more sugars, and the presence of acids, salts, flavoring materials, and other non-sweet substances. For these various reasons, researchers say it is impossible to assign a specific sweetness value to each sweetener for all purposes.

Although there is no standard test for sweetness, relative sweetness does influence a user's decision as to which sweetener he will use. However, many factors other than sweetness influence choice.

In an effort to find out the main factors governing an industry user's choice of sweetening agent or agents in making a given product, the Production and Marketing Administration of the Department of Agriculture undertook an exhaustive study. This study, made possible through funds authorized under the Research and Marketing Act of 1946, was recently completed.

Because competition among sweeteners is keenest between sugar and two primary corn sweeteners—dextrose and corn sirup—the study had a second object. This object was to determine statistically the extent of competition between sugar and the corn sweeteners in the production of processed foods.

The per capita consumption of the three primary sweeteners—sugar, dextrose, and corn sirup—has increased 4 percent since before World War II. Total sweetener use in the continental United States was estimated at slightly more than 110 pounds per capita, compared with about 106 pounds before the war. Per capita consumption of the predominant sweetener, sugar, is slightly less than before the war—about 97 pounds in 1950, compared with 98 pounds before the war. Per capita consumption of corn sirup (dry basis) went from 7 to 8 pounds, and dextrose from 2 to 5 pounds.

While before the war sugar consumption was 12 times as large as that of all the corn sweeteners combined, after the war it was whittled to 7 times as large. Sweetener competition, therefore, has resulted in a substantial bite by corn sweeteners into sugar use.

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Other sweeteners such as honey, maple sugar and sirup, molasses, sugarcane sirup, refiners' sirup, and sorgo sirup—used mainly to impart flavor or other special characteristics to the finished product—represent about 3 percent of the total sweetener distribution.

For several years before World War II there was a steady increase in the production and use of corn sweeteners in the United States. Wartime curtailments in supplies of cane and beet sugar available for domestic civilian requirements gave added impetus to this trend. It was reported that some manufacturers of sugar-containing products who used corn sweeteners for the first time during the war had found them acceptable and continued their use after sugar again became abundant in late 1947.

In addition to the boost that war times gave to corn sweeteners; the use of this type of sweetener was accelerated by a trend toward industrial manufacture of processed food products formerly produced in homes. The extent of this trend is indicated by the fact that industrial use of sweeteners has more than doubled in the last 15 years, while population has increased by only about one-fifth. While food processing industries used less than one-third of the sugar distributed in the United States before the war, they now use slightly more than one-half. The housewife uses sugar almost exclusively in her cooking, baking, and canning while many industrial food processors use a combination of sugar and one or more of the corn sweeteners.

Except during the war years, sugar has represented about three-fourths of total sweeteners used by industry as a whole. This steady proportion however, is not a significant measure of the competition between sugar and other sweeteners. There has been no change in the pattern of sweetener use in the confectionery industry. Beverage manufacturers have reduced slightly the use of corn sweeteners relative to sugar. But significant increases have occurred in the relative use of corn sweeteners by the baking, ice cream, and canning industries. The confectionery and baking industries, which used corn sweeteners more extensively than the others in the prewar period, have not experienced as much business expansion as the others since that time. This situation accounts for the fact that the relative use of corn sweeteners by industry as a whole has not increased despite the significant increase in such use by a majority of the industries.

Sweetener Choice

The major factors considered by food processors in determining sweetener use are differences in physical and chemical properties of various sweeteners, their relative prices, restrictions imposed by Federal and State regulations, and, to a lesser extent, advertising and sales programs, handling problems, consumer preferences, and psychological factors.

The most important physical and chemical properties considered by a processor are: Relative sweetness; flavor; capacity of absorbing and retaining moisture; solubility and crystallization characteristics; density of liquid sweeteners and moisture content of solid sweeteners; mol-

ecular weight and chemical properties; and fermentation and preservative properties. Requirements also vary widely according to the qualities desired in particular products.

Sweetener use in the manufacture of processed foods has been increasingly influenced for many years by both Federal and State regulations. At first these regulations leaned heavily in favor of sugar as an exclusive sweetener. Progressive revisions of these standards have generally been toward allowance of a much broader range of sweeteners.

Needs of the various sweetener-using industries determine greatly the competition between sweeteners in industry. Here are some of the general factors involved in choices of sweeteners or combinations of sweeteners by specific industries:

An increase from 13 to 21 percent over the prewar period in the ratio of corn sweeteners to the total of all sweeteners used in the baking industry is due largely to replacement of sugar with dextrose in bread making. Many bakers report that bread made with dextrose compares favorably with bread made with sugar. It is reported also that dextrose can be substituted for sugar in bread to a greater extent than in any other food product.

An increase in the use of corn sweeteners in the ice cream industry from 3 to 10 percent of total sweetener use appears to be the result of a growing acceptance by many in the industry that quality ice cream can be produced at lower cost through the use of a combination of sugar and corn sweeteners. The increase also has been associated with the growth in relative importance of sherbets and ices within the industry. The use of dextrose and high-conversion corn sirup is relatively greater in these products than in ice cream, because most manufacturers believe a superior product is obtained by using a combination of sugar and a corn sweetener.

An increase of corn sweetener use from 5 to 12 percent of total sweetener use in the canning and preserving industry has been largely an outgrowth of research. Studies have indicated that use of a combination of sugar and corn sweeteners was desirable for giving control over the degree of sweetness and over-crystallization, and for bringing out natural fruit flavors.

Use of corn sweeteners in the <u>beverage industry</u> has declined from 9 to 7 percent since before the war because the production of soft drinks has expanded relatively more than that of alcoholic beverages. Sugar represents a much larger proportion of total sweetener in soft drinks than it does in alcoholic beverages.

The confectionary industry used about the same relative quantities of sugar, dextrose, and corn sirup after the war as it did before. Although use of corn sirup has increased, so has the use of sugar.

The sweetener study is described in detail in a new report entitled "Competitive Relationships between Sugar and Corn Sweeteners." A copy is available at the Office of Information Services, Production and Marketing Administration, U.S. Department of Agriculture, Washington 25, D. C.

New Scale Weighs Cotton Cheaper

By Charles D. Bolt'

A switch from the old beam scale method of weighing cotton to portable platform dial scales may mean money in the pocket to cotton ware-housemen under certain circumstances.

There are at least three ways in which such substitution may result in savings in cotton bale weighing operations. Platform scales permit elimination of all manual laborer used in operating hooks and rope of beam scales; often make it possible to cut the size of the clerical crew working with the weigher; and may reduce weighing time by 20 to 50 percent.

The possibility of savings was uncovered in one phase of a general project to study materials handling in cotton warehouses conducted by the U. S. Department of Agriculture under authority of the Research and Marketing Act of 1946.

Improved Design

The evaluation was centered on a newer type of portable platform dial scale which has been on the market for only two seasons. Earlier models of portable scales were constructed with platforms 10 to 14 inches above floor level and required the building or purchase of ramps to suit the scale. On the newer portable scales, the platforms are lower and ramps are hinged to the scale frame.

In contrast to the stationary type platform scale used in many cotton warehouses, the portable scale may, of course, be moved from one point to another within the warehouse.

While the newer type portable platform scale is produced by several manufacturers, these features are common to all: Platform heights are less than 6 inches above the floor; ramps are hinged to the scale frame, and may be folded back onto the platform when the scale is to be moved; and jacks are crank-operated and are used, in conjunction with spirit levels on the housing, to level the scale in preparation for weighing. The method of raising and lowering the wheels varies among manufacturers.

In detail, ways in which substitution of the portable platform scale for the beam scale may result in decreased labor costs were shown by the study to be these:

All manual laborers employed in the operation of a beam scale--that is, the men needed to operate the hooks and the rope--can be eliminated

through the substitution of the portable platform scale. Thus, the labor of up to three such workers (for example, two hook men and one rope man) may be saved.

The beam scale consists of a beam supported at each end by upright poles. A chain, hanging at a fulcrum in the middle of the beam, has hooks attached to lift the bale clear of the floor.

The hook men attach the hooks to the bale as it is placed under the beam, and the rope man pulls down a lever, raising the bale from the floor for the weighing.

The portable scale requires only that the bale be trucked onto the scale platform, thus eliminating any need for the hooks and rope lift.

Automatic

Because the operation of a dial-type platform scale is essentially automatic, it is often possible also to reduce the size of the clerical crew working with the weigher. This reduction is accomplished by having the weigher take over the duties of one of the other clerical workers—either the tag checker or the recorder. The weigher is able to assume these additional duties since his role in actually weighing a bale with the portable platform scale is reduced to merely reading the dial.

An additional advantage is that with an automatic scale a weigher possessing less skill or experience may be used. In some localities this feature would represent one of the more important advantages of the platform dial scale.

A substantial reduction in weighing time is usually obtained. Analysis of time studies indicates that where the platform scale is used in place of the beam scale, a reduction of from 20 to 50 percent in the time required to weigh a bale generally may be expected.

When sustained periods of weighing are involved, the time required to weigh a bale ordinarily will be reduced more than when short periods are involved. This larger reduction is due to the fact that fatigue, which takes effect very early, and often with considerable intensity, upon the weigher and the manual workers of a beam-scale crew, is not so important a problem in the operation of a platform dial scale.

A reduction in the time required for weighing a bale makes it possible, of course, to speed up the flow of cotton across the scale. Weighing is very often the chief bottleneck hampering the flow of bales through operations performed in some particular sequence or order (as, for example, unloading a car, weighing, sampling, transporting to the storage area, and storing). Therefore the ability in such cases to weigh more bales in a given amount of time would make it possible to increase the flow through the entire series of operations, with resulting savings in man-hour costs.

Conditions among different warehouses vary greatly, particularly in the number of men used as hand truckers, as samplers, and for unloading

and stacking. Therefore, the individual warehouseman must determine for himself the manner in which he takes advantage of the increased weighing speed possible with the platform scale. For this reason, no attempt was made to estimate the savings which may result from this increased speed.

Most of these advantages or savings also apply to the use of other types of platform dial scales. However, the nonportability feature of the stationary floor scale limits its efficient use to the particular area in which it is located, whereas the relatively high platform of the earlier models of portable scales makes it difficult to move a loaded hand truck onto the scale platform. This factor not only results in poor weighing speed but usually requires the assistance of one or more manual laborers for pushing trucks onto the scale.

Possible Payroll Savings

An indication of estimated payroll savings can be gotten through the use of an example. The portable platform dial scale in some warehouses could save the labor of four men — three manual laborers and one clerk. Assuming wage rates of 75 cents an hour for manual labor and \$1 an hour for clerical work, the total saving in direct labor costs at the scale would be \$3.25 an hour, or \$325 for every 100 hours' use of the scale.

On the basis of these assumed wage rates, and considering only the direct labor costs saved through reduction in size of scale crew, 500 hours' use of the portable platform dial scale would result in savings of more than enough to cover the cost of the scale.

It should be noted that these savings represent the minimum that might be expected, since the calculations do not take into account savings that may result from increased speed of weighing that are possible with a portable platform scale. The manner in which this capacity for increased speed is used and the savings which may result from it will vary widely from warehouse to warehouse.

Maybe Not

Under some conditions, it may not be economical or desirable to use the portable platform scale. Among the factors to be considered before planning purchase of this type of scale are:

- 1. The substantially higher initial cost (about \$1,500 f.o.b.) of the portable platform dial scale, compared with the beam scale. The number of bales expected to be weighed per season must be large enough to justify this investment.
- 2. The portable platform scale is somewhat more cumbersome to move than the beam scale. Hence, the portable platform scale is not readily adaptable to operations where the position of the scale has to be changed after every few bales are weighed.
- 3. It is important that the warehouse construction be suitable for the use of this type of scale, particularly the floor. For this reason,

it is recommended that the manufacturers' representative be consulted as to suitability.

4. All the hand trucks used in the operation should be made to weigh the same amount.

It should be recognized that although under many conditions the portable platform scale may be much more efficient than the type of beam scale commonly used for bale weighing, it is not necessarily also the most efficient scale to use. For example, it is obvious that where bales, in being moved into the warehouse, must always follow the same path or route, a stationary floor scale placed at the proper point along that route would provide the same advantage as the portable platform scale and at considerably less initial cost.

Also, for certain weighing operations there is available a method of weighing, employing a modified beam scale mounted on wheels or casters, which can be used to improve the over-all efficiency of weighing and related handling operations carried on in conjunction with it beyond the point which can be reached with a platform scale. However, since this method requires a very large amount of space for receiving cotton, it could be employed profitably in only a limited number of warehouses. Because of the limiting conditions which apply to the use of other scales or weighing methods, it will be found that in many, if not most, warehouses in which beam scales are now used, portable platform scales offer the best opportunity to obtain substantial savings in weighing and handling costs.

The report which describes the study in detail is entitled "Evaluation of Use of Portable Platform Dial Scale for Weighing Operations in Cotton Warehouses." A copy may be obtained on request from the Office of Information Services, Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C.

WHEN OHIO FARMERS SELL EGGS BY GRADE, QUALITY IMPROVES

Ohio farmers when paid for eggs according to quality, as measured by official grades, make an extra effort to produce better eggs. Egg handlers in that State using the Federal-State official grading service increased the percentage of eggs marketed in the top grades in 8 years from 55.6 percent to 74.5 percent, according to a new USDA report.

In 1950, the 26 organizations using the official grading service handled 26 percent of the eggs marketed from Ohio farms. The volume of eggs graded by the Ohio Federal-State egg-grading service increased from about 14,000 cases in 1932 to about 1,677,000 cases in 1950.

The study was made by the Farm Credit Administration with funds provided under the Research and Marketing Act. The results are published as Miscellaneous Report 153, "Some Effects of Marketing Eggs in Ohio According to Official Grades."

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Spinach in Transparent Bags Sells Better If Bags Are Plain

By Donald R. Stokes

A limited survey conducted in Baltimore showed that more store customers preferred buying spinach packaged in plain unprinted transparent film bags than spinach packaged in similar transparent bags heavily printed with words and designs.

The test was conducted by USDA in cooperation with the Maryland Agricultural Experiment Station under authority of the Research and Marketing Act of 1946.

Seven stores cooperated in the test in the spring of 1949. Spinach was displayed in both types of bags side by side and at the same price for 5 weeks. The plain bags were closed with a "saddle header" label of three colors on a white background, on which the prepackager's brand name was printed in a style similar to that on the printed bag.

Choice

The printed bags were closed with a saddle header label of one color on a white background on which was printed the prepackager's brand name in addition to the brand name printed on the film bag. Because of the side-by-side display, the store customers were aware that they had a choice of the same brand of spinach packaged in two different ways.

During the 5 weeks 2,674 plain bags and 2,265 printed bags were sold.

It was concluded from the study that store customers prefer a package with a high degree of visibility, and that a considerable printing of words and designs on transparent film packages is unnecessary.

The printed bag cost about half a cent more than the plain bag. In the operations of a typical spinach prepackaging plant, this difference in costs would amount to about \$25,000 a year.

The researchers pointed out that the test measured the comparative salability of spinach in a heavily printed bag and spinach in an unprinted bag. If plain bags were compared with bags printed with a moderate number of words and designs—words and designs that do not materially impair the visibility of the spinach in the bag—the results might have been different.

Prepackaged and Bulk Spinach Sales Compared

Studies of spinach and kale sales were also conducted in two Washington, D. C. self-service stores in the spring of 1948. The purpose was to find out how much some self-service shoppers want the extra service and convenience of prepackaged or frozen spinach, and how much they are willing to pay for them.

The studies showed that although bulk spinach was available at a considerably lower price, many shoppers preferred the prepackaged or frozen product.

Of total spinach sales during the study, prepackaged and frozen spinach accounted for 40 percent and 13 percent, respectively, even though the average retail price for prepackaged and frozen spinach was about twice that charged for bulk fresh spinach per edible pound. The study was made when all forms of spinach were available for sale, under commercial conditions, with varying merchandising practices, prices, and qualities.

When both prepackaged and bulk kale were on sale in these two selfservice markets at the same time, the prepackaged kale accounted for 52 percent of the total edible pounds of kale sold. The rest of the sales were of bulk kale. The retail price of prepackaged kale also was about double the price of bulk kale per edible pound.

The full report of the studies, entitled "Prepackaging Spinach and Kale," contains detailed data on prepackaging and retailing costs, waste and spoilage losses, and consumer reactions to prepackaged greens. A copy of the report may be obtained from the Office of Information Services, Production and Marketing Administration, USDA, Washington 25, D. C., or from the Maryland Agricultural Experiment Station, College Park, Md.

STATUS OF CCC PRICE-SUPPORT PROGRAM AS OF SEPTEMBER 30

As of September 30, \$1,885,088,000 was invested in Commodity Credit Corporation price-support program loans and inventories, USDA reports. The Corporation sustained a net realized loss of \$31,252,000 in carrying out the program during the first 3 months of the current fiscal year (July, August, and September). The net realized loss for the fiscal year that ended last June 30 was \$345,599,000.

Of the total investment of \$1,885,088,000, loans outstanding totaled \$584,954,000, including \$78,434,000 of commodity loans held by lending agencies, \$401,550,000 held by CCC, and \$104,970,000 of loans approved but not fully processed. Inventories acquired under loan, purchase agreement, and direct purchase operations represented an investment of \$1,300,134,000.

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Domestic Wool Clip Analyzed

The wool and textile industry recently got its first realistic look at the composition of one year's total domestic wool clip. While the analysis was of the 1946 clip, the look gives the industry a good idea of current production because proportions between grades and other factors continue to hold.

The study, conducted by the Production and Marketing Administration, was an offshoot of a Commodity Credit Corporation wool price-support program. Virtually all of the domestic wool produced and offered for sale in 1946 was acquired by the CCC under a wartime purchase program.

First Chance At an Entire Crop

This vast purchase program, authorized by Congress, presented the first opportunity to make a detailed analysis of the entire wool clip produced in a single year, by grade, staple length, shrinkage, and other factors, for the various States and for Alaska and Hawaii. The PMA analysis of Government purchases made possible the compiling of unparalleled descriptive information on the Nation's wool clip.

Results of the study give producers an opportunity to compare their production with a standard and may provide textile manufacturers and others with information useful in current operations. It is believed that the composition of the current clip will not very appreciably from the clip marketed in the 1946 marketing year.

Prior to 1946, accurate and all-embracing studies of this kind were out of the question since it was impossible to secure data on the bulk of a year's clip.

The classification as to grade, staple length, shrinkage, and other such factors for each lot of wool offered for sale to the Government was determined by an appraisal committee made up of experienced wool men. The appraisers used visual methods generally employed in the wool market to determine the classification and to estimate the shrinkage of each lot of wool. The core-sampling and testing techniques of determining shrinkage came into use in 1947, too late to be used in the 1946 purchase program.

Grade plays an important part in selecting wool for the innumerable cloth and other textile uses. Most of the domestic consumption is used in the manufacture of clothing and blankets, and the 1946 breakdown places most wool in grades that are used for these purposes. Most of the coarse wool, like Common and Braid, and the coarser wool used in the manufacture of rugs and carpets is imported.

The information which went into the study was based on an appraisal of about 122.4 million pounds of wool, clean basis (or 289 million pounds, grease basis), and pulled wool purchases of 39.6 million pounds, clean basis.

Grade

Approximately 54 percent of the 1946 domestic clip purchased by the Government as grease wool was classified as Fine. Most of the rest of the purchases of grease wool was in the following grades (based upon diameter of fiber): 1/2 Blood, 16 percent; 3/8 Blood, 15 percent; 1/4 Blood, 10 percent. The remainder—about 5 percent—was in the coarser grades and off-wools.

The grade distribution of wools produced varied widely in different States. About 90 percent of the wool grown in Texas, New Mexico, Arizona, and Nevada was classified Fine. Wools produced in Wyoming, California, Utah, and Montana were classified at from 58 to 65 percent Fine. Regions in which the wool produced was classified largely as 3/8 Blood and 1/4 Blood include the North Atlantic, East North Central, West North Central, and South Atlantic States, where the greatest proportion of Fleece-type wools originate.

Territory and Fleece Wools

About 200 million pounds of the 1946 clip purchased by the Government as shorn grease wool were Territory-type wool and 75 million pounds were Fleece-type. Territory wool is described as wool produced predominately in the Western States, in the former United States territories. Fleece-type wool is produced mainly east of the Missouri and Mississippi Rivers, primarily from flocks on small farms. About 60 percent of the 1946 Fleece wool came from the North Central States. The bulk of the Territory wool was produced in Texas, Montana, Wyoming, Colorado, California, Utah, New Mexico, and Idaho.

Texas wool, although commonly classified in a special category by the wool trade, is included in the study with Territory-type wool. Approximately 55 percent of the Oregon wool was classified as Territory-type wool; the remaining 45 percent was classed as Fleece-type.

Shrinkage

Shrinkage, or loss in weight of wool as shorn from the sheep when grease, dirt, and other non-wool components are removed by scouring, varied according to grade for the 1946 clip as a whole approximately as follows: Fine wools, between 56 and 65 percent; 1/2 Blood, between 51 and 60 percent; 3/8 Blood, between 41 and 50 percent; and 1/4 Blood, between 41 and 45 percent. Shrinkage estimates for substantial quantities of wools, however, were outside these ranges in each grade.

In general, the estimated shrinkages of Fine wool produced in the Western States tended to fall within the 61-65 percent range. This was

particularly true of wool from Arizona, California, Colorado, Idaho, New Mexico, and Oregon. Yet, shrinkages of substantial quantities of wool from all of these States were also within the 56-60 percent range. In a few of these States moderate quantities of wool were estimated to have shrinkage within the 66 to 70 percent range and higher.

Estimated shrinkages of the Fine wool in the principal Fine wool producing areas of the East tended to fall within the 56-60 percent range for wool produced in Ohio and Pennsylvania, and from the 61-65 percent range for Fine wool produced in Michigan.

Medium Wool Shrinkage

Shrinkages of medium wool--3/8 Blood to 1/4 Blood--from the 1946 clip also show a wide range of variation. For example, shrinkages for 3/8 Blood tended to be substantially higher in the western Mountain States than in the States east of the Missouri and Mississippi Rivers.

The largest proportion of 3/8 Blood wool from Idaho and Wyoming had shrinkages in the 51-55 percent range. The largest proportion of the 3/8 Blood wool from Colorado had shrinkages within the range from 46 to 50 percent. The largest proportion of this grade of wool from California and Oregon had shrinkages in the 41-45 percent range.

In the Eastern States, the bulk of the 3/8 Blood wools from farm flocks has shrinkages in the 46-50 percent range. States from which the largest proportion of the 3/8 Blood wool had shrinkages in this range were Illinois, Indiana, Iowa, Minnesota, Missouri, Ohio, South Dakota and Tennessee. Three-eighths Blood wool from Kentucky, Michigan, and Pennsylvania had shrinkages for the largest proportion in the 41-45 percent range.

"Off-wools"

Nearly 15 million pounds, or a little more than 5 percent of the 1946 clip purchased in the grease, were classified as "off wools." Approximately 12 million pounds of the 15 million purchased, or about 80 percent, consisted of types appraised as burry and seedy, black and gray, mixed Southern, fed lamb, crutchings and clippings, and tags. Nearly one-third of the total volume of "off wools" was appraised as burry and seedy.

It should be pointed out that the term "off wools" does not necessarily mean inferior wool. In many instances, where the term is used in the report, "off wools" represents an accumulation of small lots made up of mixtures of good and inferior wools offered to the Government.

This article covers only the highlights of the study. A copy of the full report, "The Domestic Wool Clip: Grades, Shrinkages, and Related Data," may be obtained on request from the Office of Information Services, Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C.

DEFENSE NOTES

Agricultural Storage Jurisdiction Determined.—Jurisdictions of the Production and Marketing Administration, USDA, and of the Defense Transport Administration in the fields of warehouse and storage facilities have been determined in an agreement between the two agencies recently made public.

PMA is to act as "claimant" and will handle functions related to priorities, allocations, requisitioning, and condemnation proceedings authorized under Title II of the Defense Production Act for obtaining additional supplies and facilities needed for the national defense, tax amortization, and loans under Section 302 of the Defense Production Act for the following classes of facilities:

(a) Private farm storage; (b) storage and warehousing facilities owned or operated by food wholesalers, food retailers, public feeders, or persons engaged in processing, canning, freezing, or otherwise preparing food for marketing and distribution, and used as an integral part of their business (but not including storage or warehouse facilities operated in whole or in major part as public storage or warehousing facilities); (c) cold storage food lockers available to the general public (but not including commercial-type public cold storage facilities); and (e) tobacco auction warehouses.

The Defense Transport Administration will exercise corresponding functions with respect to all other warehousing and storage facilities.

* * *

Pesticide Survey. -- A memorandum has been sent to all PMA State Committees announcing PMA's intention of making a State-by-State survey of pesticide and related chemicals usage in 1950-51 and an estimate of demand for the 1952 crop year. A similar survey, the first of its kind, was conducted last year. The accuracy of last year's study proved its value in serving as a firm basis for the claiming of pesticides for agriculture.

* * *

Insecticide and Fungicide Outlook.—As a guide for farmers planning next year's production, USDA has outlined the prospective 1952 supply situation for insecticides, fungicides, and herbicides (weed killers). The situation indicates that farmers could help avert possible bottlenecks in supplies of these necessary materials by buying some part of their estimated requirements now and through continued orderly purchases in advance of actual needs.

The manufacture and distribution of the large quantities of insecticides, fungicides, and herbicides required for agricultural production cannot be accomplished in the relatively few weeks before and during the growing season. It has become a year-round job. Although production

capacity is generally adequate, storage facilities will not accommodate the quantities of pesticides being made.

Shortages of the chemicals and metals used in the manufacture of insecticides and fungicides are becoming more acute as the defense effort expands. Shortages of sulfur, copper, and lead already exist. Alternate materials will have to be used to extend supplies of pesticides using these basic materials if farmers' requirements are to be filled in 1952.

Orderly purchases of at least part of the 1952 needs of fungicides, insecticides, and herbicides by farmers now, and careful storage until time of use, could help prevent the danger of short supplies which might come with increased competition for scarce chemicals and metals later. Such action would reduce the pressure of manufacturers' storage stocks against further production, and would help prevent sudden unmanageable strains on shipping and storage during the growing season.

Farmers unable to buy now for lack of storage facilities or other reasons, could aid by placing orders for future delivery of their estimated 1952 needs. This would enable manufacturers to gauge over-all 1952 requirements accurately. Although individual farmers will have to make their own decision in the matter, buying now also might prove economical. Historically, at least, the present period between growing seasons is the low-priced period for insecticides, fungicides, and herbicides. Orderly purchases in many farm areas early in 1951 was a major factor in the availability of adequate supplies of these chemicals at the time they were needed.

A summary of the 1952 outlook for major insecticides, fungicides, and herbicides follows:

Production of chlorine and benzene, raw materials for synthetic organic pesticides such as DDT, benzene hexachloride, and 2,4-D, is expected to be adequate in 1952 although this is by no means certain.

Copper fungicides now appear adequate, but shortages of metallic copper may cause difficulties when demand for the product becomes active. Lead arsenate manufacturers have been unable to obtain more than a fraction of their needs of lead to date.

Due to the world-wide shortage, supplies of sulfur for insecticides and fungicides are expected to be less in 1952 than in 1951. To conserve supplies, sulfur should be used only when it is specifically required and when no alternate materials are available.

Increased production of alternate materials such as dithiocarbamate fungicides for plant diseases, and parathion, tetraethyl pyrophosphate, and various trade-name products which can be used as miticides, should help alleviate the sulfur and copper shortages.

Grain fumigants are expected to continue scarce in 1952. Carbon tetracholoride and carbon disulfide are not being produced in quantities sufficient for both agricultural and industrial demands. Users of grain fumigants who have a choice should consider use of mixtures containing ethylene dichloride with a lesser proportion of carbon tetrachloride and no carbon disulfide.

Continuation of the trend from dusts to liquids for spraying cotton will add to demand for steel containers. Every possible effort should be made to obtain maximum re-use of metal drums where it is feasible. Under no circumstances should drums used for weed killers be re-used for insecticides and fungicides.

Meanwhile, emphasis on good management practices such as planting resistant varieties, planting at the proper time, maintenance of soil fertility, destruction of host crops or control of pests on them, and similar measures which reduce need for insecticides and fungicides should be continued. Slight changes in the weather and growing conditions can cause unexpectedly serious pest infestations and convert an apparently favorable outlook for insecticides, fungicides, and herbicides into one of acute shortages before the end of the crop year.

PECAN GRADE AND SIZE REGULATION TO BE BASED ON REVISED STANDARDS

The regulation limiting the grades and sizes of pecans which may be handled for in-shell distribution under the Federal marketing agreement and order will be based on the revised U. S. Standards for Pecans in the shell that became effective October 1, 1951.

Minimum grade requirements established under the marketing agreement and order are based on the U. S. Commercial grade. Specifications of this grade under the revised standards are practically the same as under the old standards, except that under the revised standards all pecans must be well cured.

The present regulation requires that shipments of pecans from the 5-State area of Georgia, Alabama, Florida, Mississippi, and South Carolina, for in-shell distribution, meet the requirements of the U.S. Commercial grade, with the further requirement that 75 percent of the kernels in any lot shall be of U.S. No. 1 quality and with a maximum tolerance of 9 percent for very serious damage. These minimum requirements continue in effect but will be based on the U.S. Commercial grade established under the revised grass standards which became effective on October 1, 1951, rather than the grade standards which have been superseded.

USDA TO ASSIST PECAN GROWERS

The U. S. Department of Agriculture will assist pecan growers in marketing the 1951 crop, the second largest on record (147,905,000 pounds), with an offer to buy up about 3,350,000 pounds of pecan meats. Pecans bought will be distributed to school lunch or other eligible outlets.

Marketing Briefs

(The Production and Marketing Administration announcements summarized below are more completely covered in press releases which may be obtained on request from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C. by citing the code number given at the end of each item.)

Dairy Products.—Changes in the Class III (surplus milk) milk-pricing provisions of the New York City Federal milk marketing order would result in an increase of about 3 cents per hundredweight in the minimum class price to producers were given approval on November 5. (USDA 2675-51)... Issuance of a Federal order to regulate the marketing of milk in the Providence, R. I. area was recommended by USDA at the end of October. (USDA 2614-51)... A Federal milk marketing order to regulate the marketing of milk in the Neosho Valley (Kansas-Missouri) area was issued late in October by USDA. The action followed a referendum held in the area in which 81 percent of the producers voted in favor of a marketing order. (USDA 2602-51)... The differential contained in the Class I milk price formula under the Knoxville, Tenn. Federal milk marketing order was increased 44 cents per hundredweight to producers, effective November 1, through an amended order, USDA reports. (USDA 2563-51).

Fruits and Vegetables .-- It costs ll cents more to pack a box of CIT-RUS fruit in a small packinghouse than in a large one, according to a recent study of 31 orange packing cooperatives in southern California made by the Farm Credit Administration. The study shows that costs decrease as volume increases -- a 20 percent increase in volume reducing costs 3 cents a box. A 30 percent increase in volume reduces costs 6 cents a box, and a 50 percent increase decreases costs 11 cents. (USDA 2625-51)... For the first time, USDA in November issued standards for grades of FROZEN CONCENTRATED GRAPEFRUIT JUICE. They cover a concentrate of a consistency that requires the use of three parts of water to one part of concentrate in the preparation of a beverage, and they specify requirements for two styles--concentrate with sweeteners and concentrate without sweetening. (USDA 2679-51)... USDA has also announced the issuance for the first time of U. S. standards for grades of FROZEN CON-CENTRATED BLENDED GRAPEFRUIT JUICE AND ORANGE JUICE. These standards supplement grade standards for other frozen citrus juice concentrates. The technical requirements are based on a "3 plus 1" concentrate which require three parts of water to be added to one part of concentrate for beverage use. Scoring factors for color, flavor, and absence of defects are provided for the grades of U. S. Grade A (or U. S. Fancy) and U. S. Grade B (or U. S. Choice). (USDA 2687-51).

Grain and Seeds.--U. S. exports of WHEAT during the July-September quarter were more than double the volume exported in the like period a year earlier, but exports of CORN and other coarse grains declined. Exports of wheat, FLOUR, and MACARONI are estimated by USDA at 2,893,000 long tons, compared with 1,376,000 long tons in 1950. Exports of coarse

grains are estimated at 986,000 long tons, compared with 1,155,000 long tons in 1950. (USDA 2701-51)... Loans to farmers to finance the construction or purchase of suitable FARM STORAGE FACILITIES for hay seeds, pasture seeds, and winter cover crop seeds will be available through the end of next June. The farm storage facility loan program is now open to producers of wheat, corn, oats, barley, rye, grain sorghums, soybeans, dry edible beans and peas, rice, peanuts, cottonseed, flaxseed, and the seed crops just announced. Through this program, the Commodity Credit Corporation makes loans to farmers for the purchase or construction of farm storage facilities in amounts not exceeding 85 percent of the cost of the structure. Bearing interest at 4 percent, these loans are payable in five annual installments, or earlier, at the farmer's option. (USDA 2577-51)... PMA is now prepared to make service tests of samples of SEED received from a foreign country or of seed to be shipped to a foreign country. Fees will be charged to cover the cost. The new service will include making available complete results of tests of samples of seed for any combination of the factors of germination. purity, and noxious weed seed content. It is being inaugurated as a result of requests for many years by seedsmen who engage in foreign commerce. (USDA 2694-51).

Poultry.--USDA has eased requirements under its DRIED EGG commercial export program to make it possible for exporters to buy and store this product for future export. Exporters now have 6 months from the date of delivery by the Commodity Credit Corporation in which to submit evidence of export of the eggs. Previously, the regulations required exporters to submit such evidence within 60 days. (USDA 2670-51).

Sugar. -- The Office of International Trade, U. S. Department of Commerce, has been authorized by USDA to relax export controls on sugar and to approve applications for export of reasonable quantities of sugar to countries customarily purchasing sugar in the United States. Heretofore, exports to individual countries were limited to a total of 135 tons for the 4-month period October 1, 1951, through January 31, 1952. (USDA 2663-51).

Tobacco. -- The tobacco market at Mountain City, Tenn., has been designated for the free and mandatory inspection and market news service of PMA. (USDA 2655-51)... On November 7, Secretary of Agriculture Charles F. Brannan proclaimed marketing quotas for the 1952 crop of all continental types of cigar filler and cigar binder tobacco, and designated December 7 as the date for referenda in which growers may vote (1) for quotas for 3 years beginning with the 1952 crop, (2) for quotas for 1952 only, or (3) against quotas. Marketing quotas cannot be put into effect unless they are approved by at least two-thirds of the growers voting in referenda. (USDA 2692-51)... On November 8, the Secretary of Agriculture proclaimed marketing quotas for the 1952 crops of fire-cured, dark aircured, and Virginia sun-cured tobacco, and designated December 7 as the date for holding referenda on fire-cured (types 21-24) and dark air-cured (types 35 and 36) tobacco. Quotas were approved for the 1950, 1951, and 1952 crops of Virginia sun-cured tobacco in a referendum held December 15, 1949. The 3-year approval of quotas voted by the growers of firecured and dark air-cured tobacco in November 1948 expires with the 1951 (USDA 2703-51). crop.

November 1951

ABOUT MARKETING

The following publications, issued recently, may be obtained upon request. To order, check on this page the publications desired, detach and mail to the Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C.

Publications:

Federal Regulation of Milk Marketing in the Duluth-Superior Area. AIB No. 68. August 1951. 112 pp. (PMA) (Processed)

Dairy and Poultry Market Statistics 1950. Statistical Bulletin No. 102. August 1951. 115 pp. (PMA) (Processed)

Purchases of Dairy Products by U. S. Department of Agriculture, January-September 1951 and Summary of Purchases and Sales of Dairy Products Acquired Under Price Support Programs January, 1949-September, 1951. October 1951. 14 pp. (PMA) (Processed)

Burley Tobacco at the Warehouse. PA-188. October 1951. 4 pp. (PMA) (Processed)

Cottonseed Quality in the United States 1950. November 1951. 30 pp. (PMA) (Processed)

Marketing Farm Poultry. Farmers' Bulletin No. 2030. November 1951. 68 pp. (PMA) (Printed)

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